

## REMARKS

This Amendment serves as a submission accompanying a Request for Continued Examination (RCE) being filed herewith.

Claims 14 and 28 have been amended. No new matter has been added. Claims 14, 16 to 23, 27 and 28 are pending now in the present application. Applicants respectfully request reconsideration of the present application in view of this response.

In the Office Action made final, claims 14, 16, and 17 were rejected under 35 U.S.C. § 103(a) as unpatentable over the article entitled “LaserNet – A Fiber Optic Intrastate Network (Planning and Engineering Considerations),” by Charles M. Siperko, IEEE Communications Magazine, vol. 23, no. 5, May 1985, pages 31-45 (“Siperko reference”) in view of U.S. Patent No. 4,151,373 to Widmer et al. (“Widmer reference”).

Applicants respectfully believe that the combination of Siperko reference and Widmer reference do not teach or describe each and every feature of the claims.

The Siperko article of 1985 concerns Microtel’s planned fiber optic intrastate transmission network for Florida. Specifically, the Siperko reference walks through their proposed network and the fact they will use fiber optics. However, the Siperko reference is deficient in that it does not teach or describe all of the features of claim 14. Specifically, the Siperko reference does not concern itself with overhead information (i.e., signaling and control information) as recited and in the manner transmitted in the present invention. Further, the Siperko reference does not teach or describe the various method steps of claim 14 *including using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information*. Instead, here, the overhead information (i.e., signaling and control information) takes the same optical path via the same network components as the useful information signal (i.e., not different wavelengths), and different encoding methods are used with respect to the overhead information and the useful information, as recited in the claims.

The Widmer reference purportedly concerns a system for inserting extra-information bits into a bit sequence to be transmitted over a transmission channel and for suppressing such bits from the transmitted bit sequence, an inserter converting an input bit sequence which it receives at a first repetition frequency into a second repetition frequency, and a suppressor restoring the original input bit sequence which it receives from the transmitter at the second repetition frequency. The Widmer reference also does not provide for the overhead communication as in the present claims, as in claim 14.

Applicants respectfully submit that the Siperko reference and the Widmer reference in combination do not teach or describe at least the features of performing a generation or an

analysis of the signaling and control information in one of the network terminator and in a further network element; performing one of the steps of feeding the signaling and control information into the wavelength-division multiplex network, and removing the signaling and control information from the wavelength-division multiplex network; and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is modulated independently of the useful information, as in claim 14.

In addition to the above, Applicants note that the Siperko reference appears to concern itself with the various logistics (budget concerns et al.) of an intrastate network along with the added detail of the use of fiber optics. And, the Widmar reference appears to merely describe an old 1977 system in which extra-information bits are inserted into a bit sequence to be transmitted over a transmission channel, the extra-information bits being suppressed from the transmitted bit sequence.

Accordingly, Applicants respectfully submit that the previously amended claim 14 is allowable over the cited references; and withdrawal of the rejection of claim 14 and its dependent claims 16 and 17 (which incorporate all of the features of claim 14) under 35 U.S.C. § 103(a) is respectfully requested.

In the Office Action made final, claims 18 and 28 were rejected under 35 U.S.C. § 103(a) as unpatentable over the Siperko reference in view of the Widmer reference and further in view of U.S. Patent No. 5,644,573 to Bingham et al. (“Bingham reference”) and the “Efficiency of Digital Synchronous Communication Systems” by Glisic (“Glisic reference”).

Claim 18 depends from claim 14 and is therefore allowable over the combination of Siperko and Widmer references for at least the same reasons as claim 14. The Bingham and Glisic references do not cure the deficiencies of the Siperko and Widmer references when in combination. Specifically, the Bingham reference refers to a method for coordinating communications between a plurality of remote units and a central unit to facilitate communications using a frame based discrete multi-tone (DMT) transmission scheme, where synchronized quiet times are provided periodically in the upstream communications. The Bingham reference does not appear to teach or describe at least the features of performing a generation or an analysis of the signaling and control information in one of the network terminator and in a further network element; *including removing the signaling and control information from the wavelength-division multiplex network; ... wherein the signaling and control information is modulated independently of the useful information, wherein the signaling and control information includes a characteristic signal sequence by which the signaling and control information is capable of being identified in a signal stream of the useful information such that corresponding transmitters and receivers of the signaling and*

*control information are synchronized*, as in claim 14 (and thus, claim 18) as discussed above. Further, the fourth reference cited – the Glisic reference – does not teach or describe these missing features.

Claim 28 recites features analogous to those of claim 18 and is allowable for at least the same reasons.

Accordingly, Applicants respectfully submit that claims 18 and 28 are allowable over the references; and withdrawal of the rejection of claims 18 and 28 under 35 U.S.C. § 103(a) is respectfully requested.

In the Office Action made final, claims 19 to 23 were rejected under 35 U.S.C. § 103(a) as unpatentable over the Siperko reference in view of the Widmer reference and further in view of the Bingham reference.

Claims 19 to 23 depend from claim 14 and are therefore allowable over the Siperko and Widmer references for at least the same reasons as claim 14. The Bingham reference does not cure the deficiencies of the Siperko and Widmer references when in combination. Specifically, the Bingham reference refers to a method for coordinating communications between a plurality of remote units and a central unit to facilitate communications using a frame based discrete multi-tone (DMT) transmission scheme, where synchronized quiet times are provided periodically in the upstream communications. The Bingham reference does not appear to teach or describe at least the features of performing a generation or an analysis of the signaling and control information in one of the network terminator and in a further network element; performing one of the steps of feeding the signaling and control information into the wavelength-division multiplex network, and removing the signaling and control information from the wavelength-division multiplex network; and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, *wherein the signaling and control information is modulated independently of the useful information*, as in claim 14 (and thus, claims 19 to 23) as discussed above.

Accordingly, Applicants respectfully submit that claims 19 to 23 are allowable over the references; and withdrawal of the rejection of claims 19 to 23 under 35 U.S.C. § 103(a) is respectfully requested.

In the Office Action made final, claim 27 was rejected under 35 U.S.C. § 103(a) as unpatentable over the Siperko reference in view of the Widmer reference and further in view of the Bingham reference and U.S. Patent No. 4,330,858 to Choquet (“Choquet reference”).

Claim 27 depends from claim 14 and is therefore allowable over the Siperko, Widmer, and Bingham references for at least the same reasons as claim 14 (see discussion re

claims 19 to 23). The Choquet reference does not cure the deficiencies of the Siperko, Widmer, and Bingham references when in combination.

The Choquet reference refers to a time domain supervisory channel for data terminal equipment which uses a common channel to carry both normal and supervisory messages, the supervisory messages being inserted into the message stream during intervals between normal messages via setting 1 enabling data to pass from the normal message generator directly to the channel, setting 2 enabling data to pass indirectly from the normal message generator through a delay line to the channel, and setting 3 enabling data to pass from the supervisory message generator to the channel. The Choquet reference does not appear to teach or describe at least the features of performing a generation or an analysis of the signaling and control information in one of the network terminator and in a further network element; performing one of the steps of feeding the signaling and control information into the wavelength-division multiplex network, and removing the signaling and control information from the wavelength-division multiplex network; and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information, as in claim 27, as discussed above.

Accordingly, Applicants respectfully submit that claim 27 is allowable over the cited references (taken alone or in combination); and withdrawal of the rejection of claim 27 under 35 U.S.C. § 103(a) is respectfully requested.

Applicants also incorporate herein all previous comments and responses made during the prosecution of this application.

In summary, it is respectfully submitted that all of claims 14, 16 to 23, 27 and 28 of the present application are allowable for the foregoing reasons.

#### CONCLUSION

For at least the foregoing reasons, Applicants respectfully submit that the rejections of claims 14, 16 to 23, 27 and 28 under 35 U.S.C. § 103(a) have been overcome, and that those claims are allowable. It is therefore respectfully requested that the rejections be reconsidered and withdrawn, and that the present application issue as early as possible.

Respectfully submitted,

Dated: April 10, 2009

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